

B1
cont.

20. (Amended) A sliding member consisting essentially of a substrate and a hard coating formed on said substrate, wherein said hard coating consists essentially of titanium nitride and B, has a face-centered cubic crystalline structure comprising crystallites of an average size of not more than 9 nm and has a Vickers hardness of higher than 3000.

21. (Amended) A sliding member consisting essentially of a substrate and a hard coating formed on said substrate, wherein said hard coating consists essentially of titanium nitride and at least one element selected from the group consisting of Zr and Hf, has a face-centered cubic crystalline structure with a lattice constant ranging from 0.414 to 0.423 nm in a crystal of said nitride-based material and has a Vickers hardness of not less than 2500.

B2

24. (Amended) A sliding mechanism consisting essentially of a combination of a movable member and a static member, wherein either said movable member or said static member is made of a sliding member according to any of claims 19, 20 and 21, or made by a method comprising the steps of: forming a hard coating on said substrate by simultaneously depositing in a vacuum Ti and at least one element selected from the group consisting of Cr, Zr, Hf and B on said substrate while irradiating said substrate with ion beams containing substantially nitrogen ions, and the remaining member is made of a material containing carbon.

B3 30. (Amended) A dressing tool consisting essentially of a sliding member according to any of claims 19, 20 and 21, or comprising a sliding member made by a method comprising the steps of: forming a hard coating on said substrate by simultaneously depositing in a vacuum Ti and at least one element selected from the group consisting of Cr, Zr, Hf and B on said substrate while irradiating said substrate with ion beams containing substantially nitrogen ions.

Claim 31 has been added so as to read as follows:

B4 31. A sliding member consisting essentially of a substrate and a hard coating formed on said substrate, wherein said hard coating consists essential of titanium nitride and Si, has a face-centered cubic crystalline structure comprising crystallites of an average size of not more than 9nm, and has a Vickers hardness of higher than 3000.
